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CORNING, NY 14831

EXAMINER

HOFFMANN, JOHN M

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/663,475
Filing Date: September 15, 2003
Appellant(s): BERKEY ET AL.

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GROUP 1700

Robert Carlson
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/11/2007 appealing from the Office action mailed 3/20/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct. However it fails to indicate the status of claims 15 and 20.

Claims 15 and 20 have been canceled. See amendment of 1/26/2007.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. However, the rejection based on 35 USC 112 is presently withdrawn.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-14 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilliland 4810276 in view of Burrus 4515612, as set forth in the final Office action, which relied on Official Notice for claims 11, 13 and 14.

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. The rejection of claim 4-11 and 16 under 35 USC 112(2).

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,515,612

BURRUS

5-1985

4,810,276 GILLILAND 3-1989

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-14 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilliland 4810276 in view of Burrus 4515612, as set forth in the final Office action, which relied on Official Notice for claims 11, 13 and 14.

1. (Rejected) A method of forming an optical fiber preform, the method comprising::

See Gilliland's claim 1, first line – for example.

providing a consolidated glass preform precursor body having an outer surface;

See col. 4, lines 58-60 and figure 4 of Gilliland. Feature 54 is the consolidated glass preform precursor body. The top two boxes of figure 5 represent that the body is consolidated.

depositing a layer of silica soot onto the outer surface of the consolidated glass preform precursor body to form a composite preform comprised of a consolidated glass portion and a silica soot portion;

See figure 4 of Gilliland. 68 is the layer of silica soot. 68 and 54 together are the composite preform.

and in a deuterium-exposing step, exposing the composite preform to an atmosphere containing a concentration of D2 or D20 or a mixture of D2 or D20

Gilliland does NOT teach this step.

Burrus teaches exposing preforms to deuterium to lower fiber loss: (col 2, lines 19-26). This treatment can be applied to composite preforms: (col. 4, line 61 – col. 5, line 2.) The treatment can be applied at any time (col. 6, lines 34-37) including after each layer is made (col. 5, lines 55-61) . Col. 5, lines 7-16 indicates that treatment can be done prior to consolidation – and that such is “typically quite short”. It would have been obvious to treat with deuterium after each layer is deposited in the Gilliland/OVD method to lower fiber loss to the maximum extent possible.

for a time and at a temperature sufficient to cause the D2 or D20 to penetrate the consolidated glass portion without entirely pervading the consolidated glass portion.

It is quite clear the compound penetrates (col 1, lines 66-68 and col. 2, line 65 to col. 3, line 3 and elsewhere in Burrus). From col. 3, lines 19-21 and elsewhere in Burrus: the compound does not entirely pervade – it is reacted with OH.

It is noted that there are often more than one reasonable way to interpret claim limitations; the Office uses the broadest of them. Examiner found the broadest reasonable interpretation of the “without entirely pervading” limitation encompasses the situation that at least a portion of “the D₂ or D₂O” (i.e. that which has penetrated) is destroyed (i.e. converted or reacted with the glass). Since some of “the D₂ or D₂O” is converted, not all of the D₂ or D₂O remains – it is now DO or some other specie. “the” compound could not have pervaded because it no longer exists. The finding that this is the broadest reasonable interpretation (first set forth in the 10/23/2006, spanning pages 6-7) remains uncontested. The phrase “without entirely pervading” is not defined or described in the specification. Nor could examiner find any examples in the specification. Nor does there appear to be any art-recognized meaning. Thus the plain meaning applies. The term “entirely” suggests complete and with no exceptions. The reaction of the deuterium with the OH species in the glass means that some is converted/destroyed rather than pervading.

Claim 2: Based on col. 7, line 36 of Gilliland, hydrogen compounds are present – just as in applicant’s invention. The hydrogen will inherently diffuse into the glass. Since applicant and Gilliland do substantially the same thing during deposition – (using

a hydrogen-containing fuel) one would expect the same result: diffusion of hydrogen compounds as claimed.

Claim 3: it is deemed this is inherently met since applicant and does substantially the same thing as Burrus discloses.

Claims 4-5: see Gilliland col. 9, lines 20-27 and 48-51: for claim 7 it is deemed that one can call it a purge gas because it is used to purge water from the preform. As to claim 6: See col. 8, line 63 of Gilliland – it is inherent that the composite preform is contacted with chlorine compound during its production. Claim 8 is clearly met.

Claims 9-10: see col. 5, lines 50-55 of Burrus.

Claim 11: Examiner took Official Notice (the bottom of page 7 of the 10/23/2006 rejection) that is well-known to use an inert purge gas in the fiber making art between steps, so as to remove left-over species from the previous step. Since such was not seasonally traversed by Appellant, such is treated as admitted prior art. It would have been obvious to purge the Burrus/Gilliland gases between steps, so as to prevent unintended consequences from the prior gases.

Claim 12 is clearly met by the combination.

Claims 13-14: The Official Notice was: "Examiner takes Official Notice that Corning Inc. has numerous patents involving the repetition of depositing soot on a consolidated preform - for various advantages" (see 3/20/2007 final rejection, page 3, lines 7-9). In light of this, it would have been obvious to apply the repetitions as claimed in claims 13-14 to the Gilliland/Burrus combination for the advantages disclosed in any of the various Corning, Inc. patents. The content of the Official Notice has not been

disputed, although the timing and specificity has been (see arguments section below).

Moreover, at Brief, page 10, lines 8-10, Appellant essentially agrees that the Official Notice is accurate. For these reasons, it is now considered to be admitted prior art.

Claim 16: it is deemed that that a portion with radial thickness of less than 0.0001 ppb of the radius cannot have more than 0.1 ppm of the total deuterium compound that is within the glass. Alternatively, one can find a radius small enough to make it possible – for example a radius that is comparable to the radius of an atom.

Claim 17: See Burrus, col. 3, line 30.

Claims 18-19: Given two radii: for example 0.24869044576034543634 RC1 and .000000000002333333 RC1 it is impossible to have more than 0.1 ppm of the total deuterium compound at those two radii: these two radii are less than 0.5 RC1 It is noted that claims 18-19 are so broadly written that there are other interpretations that could have been used.

(10) Response to Argument

It is argued that there would be no motivation to combine the references. The rejection clearly sets forth the motivation: to reduce the loss of the fiber. See Burrus, col. 2, lines 19-31. Moreover Appellant has already admitted such was known: [0002] of specification.

As to what Appellant assumes Examiner concludes - such does not appear to be relevant. The rejection is based on the evidence and rationale as set forth in the rejection - not any conclusion that was assumed by Appellant.

Specifically, Appellant argues that column 4, line 61-col. 5 line 2 does not teach that the treatment can be applied to composite preforms. This is not very relevant. Examiner referred to col. 4, line 61- col. 5, line 2 to point out the basis for "composite preform" in Burrus. The basis of the treatment/exposure portion of Examiner's statement was already pointed out in the rejection. Examiner could have wrote something like: "Burrus teaches to treat preforms. Burrus also discloses that his use of the term "preform" encompasses composite preforms. Thus, one in possession of the two teachings would realize that Burrus teaches treating all (disclosed) preforms - including composite preforms." Examiner apologizes for any confusion.

It is further argued that Examiner erred in interpreting Burrus statement of "any appropriate stage" as "any stage". Examiner finds the "appropriate" is almost a throw-away word that does not carry a large amount of significance. Examiner finds it means the same thing as "except when it is clearly inappropriate". It is like saying "The speed limit is 55" - one understand it to mean, "The speed limit is 55 when it is appropriate, but it is illegal when conditions are hazardous, road workers are present, etc." Examiner disagrees with the Appellant's assertion that Burrus is limited to the specific disclosed embodiments. The use of the term "any" means each and every other stage of the process - unless it cannot be performed (i.e. inappropriate).

It is also argued that Burrus's teaching of an exchange occurring after each layer applies only to the MCVD and not the OVD process. There is no rationale basis for concluding that one would not translate the "after each layer" teaching to the OVD process - especially with Burrus's open-end teaching of "any appropriate stage". It is well understood that the order of adding ingredient is usually not a patentable difference.

From MPEP 2144.04

C. Changes in Sequence of Adding Ingredients

Ex parte Rubin , 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclosing a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render prima facie obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.). See also In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); In re Gibson; 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.).

also

From MPEP 2144.04

E. Making Continuous

In re Dilnot, 319 F.2d 188, 138 USPQ 248 (CCPA 1963) (Claim directed to a method of producing a cementitious structure wherein a stable air foam is introduced into a slurry of cementitious material differed from the prior art only in requiring the addition of the foam to be continuous. The court held the claimed continuous operation would have been obvious in light of the batch process of the prior art.).

Given a teaching of adding deuterium to a preform, it is prima facie obvious to add the deuterium all at once, or on a continuous basis, or on a semi-continuous basis. To put

it another way: it would have been *obvious to try* to add deuterium at any possible stage, because there are just a few stages to add deuterium.

As to the arguments that Burrus only teaches a method for VAD and MCVD. Such does not appear to be relevant. Gilliland provides the requisite disclosure of the OVD method.

Appellant states col. 5, lines 7-16 of Burrus teaches that there should not be penetration into the consolidated glass portion. Examiner could find no mention of consolidated glass in the passage. The passage only seems to refer to the unconsolidated glass, it appears to be silent as to any consolidated glass.

The assertion of that Burrus clearly teaches away is not understood. Appellant does not point out why it teaches away, nor how/why it criticizes, discredits or otherwise discourages the combination or invention. *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1145-46 (Fed. Cir. 2004).

It is further argued that Examiner has not provided any evidence that treatment of each layer would reduce fiber loss to the maximum extent. Examiner did not intend to imply that treatment after each layer inherently results in the maximum extent, rather that it would have been obvious to get the lowering to the maximum extent feasible - and that it would have been obvious to do so by any of the Burrus treatment methods. One wanting to lower the loss in Gilliland's fiber (to the maximum extent) would have been motivated to use one of the Burrus techniques – such as treating after each layer is deposited.

Regarding the "without entirely pervading the consolidated glass portion", Appellant argues that this would only occur if all of the deuterium were reacted with OH so that none of it would continue to migrate through the glass. Examiner could not find any basis for this conclusion by Appellant. As set forth in the rejection of 10/23/2006 (paragraph bridging pages 6-7) the broadest reasonable interpretation of the "without entirely pervading" limitation reads on the situation where some of the compound is destroyed/converted. It is undisputed that this is covered by the broadest reasonable interpretation of Appellant's claims. In other words: Appellant's argument is valid for a reasonable (although narrow) interpretation. The argument is not valid for the undisputed broadest reasonable interpretation. Examiner could have derived a reasonable interpretation for "without entirely pervading" that would have excluded the prior art, and still read on what is disclosed in the application, however such may provide a scope that is unfairly narrow to appellant.

The PTO gives a disputed claim term its broadest reasonable interpretation during patent prosecution. Hyatt, 211 F.3d at 1372. The "broadest reasonable interpretation" rule recognizes that "before a patent is granted the claims are readily amended as part of the examination process." Burlington Indus. v. Quigg, 822 F.2d 1581, 1583 (Fed. Cir. 1987). Thus, a patent applicant has the opportunity and responsibility to remove any ambiguity in claim term meaning by amending the application. In re Prater, 415 F.2d 1393, 1404-05 (CCPA 1969). Additionally, the broadest reasonable interpretation rule "serves the public interest by reducing the possibility that claims, finally allowed, will be given broader scope than is justified." In re Am. Acad. of Sci. Tech. Ctr., 367 F.3d 1359, 1364 (Fed. Cir. 2004) (quoting In re Yamamoto, 740 F.2d 1569, 1571-72 (Fed. Cir. 1984)).

In reference to Examiner's finding that the prior art reaction between the glass and deuterium reads on the claim, the Brief at page 7, lines 13-14 Appellants "submit that this would occur if all of the deuterium were reacted with OH so that none of it would continue to migrate through the glass." Appellant's use of the term "all" and "none" indicates that the claim requires that no deuterium whatsoever can be in the glass. Examiner can find no basis for such an interpretation.

Dependent claims

Claim 6: it is argued that the rejection is improper because there is nothing that suggests that dehydration should occur prior to the deuterium exposing step. This is irrelevant because the claim does not require a step of dehydration, rather it is merely exposed to "dehydration atmosphere" which can be an atmosphere which comprises chlorine. It remains undisputed that it is inherent that the preform is contacted with chlorine as set forth in the 10/23/2006 rejection.

Appellant correctly points out that col. 5, lines 50-55 does not teach using an inert gas as required by claim 9. However claim 9 depends on claim 4; in the rejection of claim 4, the Office referred to page col. 9, lines 20-27 which clearly refers to an atmosphere with an inert gas - helium. It is clear that Examiner's treatment of claim 9 does not imply that all of the features required by claim 9 are disclosed in col. 5, lines 50-55. Rather it is an indication that one should "see" the passage and combine it with all the prior discussion of the prior art, that one would realize the broad usage of an inert gas is not an unobvious modification.

Appellant further argues that Examiner should not have taken Official Notice for claim 11 in the final Office action. This is a petitionable matter, and not appealable. Strictly speaking, Examiner did not take the Official Notice in the final Office action. The Official Notice was taken in the first Office action, and became admitted prior art as of the Final Rejection because applicant failed to traverse the Official Notice. See MPEP 2144.03. Although it reflects that examiner "should" have reminded Appellant that it was admitted – it does not appear to be an absolute requirement.

To the degree that applicant's present traversal could be considered timely, it is insufficient. Appellant's traversal is based on the assertion that purging is "not particularly common" to use an inert purge gas, among other things that maybe true but are not germane to the Official Notice. It remains undisputed that "it is well-known to use an inert purge gas in the fiber making art between steps, so as to remove left-over species from the previous step." In other words: Appellant's traversal is based on ancillary things regarding purging gases, Appellant fails to point out how those things reasonable suggests the Official Notice is improper. For example, the fact something is "not common" is largely irrelevant to whether is well-known. Platypuses are well known, but "not particularly common".

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In other words: Appellant is correct that the references do not teach the

limitation of claim 12. This is not important because the limitation is clearly met by the combination of references. If one were to modify Gilliland in light of Burrus, in the manner indicated in the rejection, then one would obtain a method which includes the step of claim 12. For example, see figure 5 of Gilliland which shows overcladding.

Regarding claims 13-14: in the Final Rejection on page 3, Examiner took Official Notice that Corning Inc. (the current party of interest) has numerous patents involving the repetition of depositing of soot on a consolidated preform - for various advantages. This is undisputed by Appellant, thus it is now admitted prior art. In fact, Appellant essentially agrees that this is true (Brief, page 10, lines 8-10) that Corning's patents do disclose advantages. Appellant points out that taking Official Notice in a Final action should be rare: given that the Official Notice pertains to Corning Inc, and thus Appellant's are probably among the foremost experts in things regarding Corning Inc. and would instantly recognize the Notice was accurate – Examiner adjudged there would be little harm in concluding that this would be one of those 'rare' times it was proper. And based on Appellant's tacit agreement - it is deemed it is now admitted prior art.

However, Appellant does argue that the rejection is still improper because it fails to indicate what the advantages are, which makes it impossible to respond to the rejection. Examiner is not aware of any requirement that there be any specificity for an advantage to modify, nor does Appellant point to any. For example, if a reference were to have stated, "It would be obvious to modify parameter X, for any of the known advantages of modifying X", from Applicant's argument, one could not use this

reference, because none of the "known advantages" is disclosed. Examiner does not think such evidence should be ignored - whether it is in a reference or admitted prior art. It is deemed that a *prima facie* rejection based on an unspecified advantage is proper.

Alternatively: given unspecified advantages; it would have been obvious to try the repetition, to see if one can obtain any advantages.

A Still further alternative: Given Appellant's background at Corning. This gives Appellant a unique ability to judge whether any of the known advantages would apply to the combination. Yet, Appellant gives no argument as to why even a single advantage may not apply.

Regarding claim 17: Appellant complains that the rejection is not understood. The discussion of claim 17 in the final Office action was a inadvertent remnant of the first Office action. The prior attorney corrected an error in claim 17, who did not discuss it or otherwise suggest it could possibly define over the combination. Burrus clearly discloses the low OD concentration in claim 3, lines 19-40. Furthermore, given that the claim 1 has explicit steps "providing" and "exposing" and claim 17 does not. There is no require interpretation that there must be a step of forming. Rather Examiner finds the broadest reasonable interpretation is that the body must have an OD of less than 0.1 ppm for at least some portion of the process. Although Appellant argues that the method results in the 0.1 ppm OD, Examiner can find nothing in the claim which implicitly or explicitly requires such. It permits the concentration at any time – after the last step, or even during the providing step. One would reasonably expect to start the process with no OD formed there in (i.e. 0.000... ppm formed therein) in the starting

rod, because none is mentioned. One of ordinary skill would assume no D since D is expensive, and it would have been obvious not to use expensive materials.

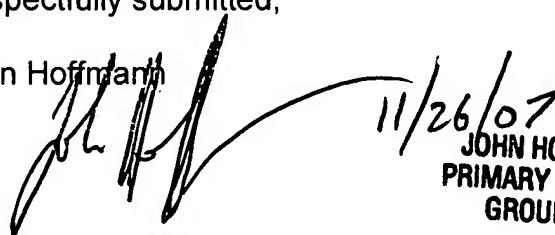
(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

John Hoffmann



11/26/07
JOHN HOFFMANN
PRIMARY EXAMINER
GROUP 1300

Conferees:



Steve Griffin

/Romulo H. Delmendo/

Romulo H. Delmendo, Appeal Conferee